THE WINTER SIGHTING DRILL TARGET

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The Winter Sighting Drill Target Manual, 1942, is approved and herewith published for the information and guidance of all concerned.

The Marine Corps is indebted to Lieutenant Colonel John G. Winter, Cavalry, U. S. A., retired, for introducing it to the Marine Corps and assigning his interest to the government.

T. HOLCOMB,
The Commandant,
U. S. Marine Corps.

THE ANSWER TO A PROBLEM

THE WINTER SIGHTING DRILL TARGET

Possibly the most difficult fundamental of marksmanship to get across to shooters is CORRECT Sighting and Aiming.

Difficult, not because the subject is hard to explain, but difficult because the precision required for good results is hard to *demonstrate.*

No one not an excellent shot can appreciate the absolute precision necessary in aligning the sights if obscure or distant targets are to be hit.

Instructors in marksmanship continually stress Precision. It is a by-word of the Rifle Range that nothing is "Almost Right"; it is either "100% Correct" or is it "All Wrong."

But what is "100% Correctness?" Until the instructor can *demonstrate* to the student the difference between "100% correct Sight Alignment" and "Almost Correct Sight Alignment," the student will surely fail to appreciate the degree of precision that the instructor speaks of when teaching Sighting and Aiming.

Up to the present, the standard equipment for demonstration has been the sighting bar and the triangulation gear described in the Field Manuals on marksmanship. Unfortunately, while the sighting bar demonstrates the *theory* of correct sight alignment, it does not give a *true* picture of the sights of a rifle aligned on a target. It looks *something* like rifle sights in alignment, but when the student comes to actually looking through his rifle sights at a distant mark he finds a job on his hands far more difficult than aligning the parts of a sighting bar. The peepsight is not nearly so large and clearly defined; the front sight is not nearly so broad and sharp, and the bulls-eye is a tiny dot compared with what he saw on the sighting bar. As a matter of fact, the picture he sees through the rifle sights is nothing like what he saw on the sighting bar.

To align the sighting bar is easy; to align the rifle sights is difficult. The degree of precision required for the accurate delivery of fire has not yet been demonstrated to the student: the student is unable to comprehend the degree of precision required, and so, human nature being what it is, he is satisfied with an alignment that looks "pretty good."

The Instructor expects to catch those men who align their sights "almost right" through the results attained in the Triangulation

Exercises and through the immediately preceding Second Sighting and Aiming Exercise.

But can he catch them and correct their faults?

Let us follow through on these exercises and see what happens.

In the second sighting and aiming exercise, the Instructor aligns the sights of a rifle, held in a box, on a mark. He then moves aside and has the student view the alignment. The Instructor then moves the rifle out of alignment and has the student realign the sights; the Instructor then checks the results.

But, in moving back and forth, the Instructor and the Student must be careful not to touch the rifle or the box or the alignment will be thrown out. And so the student must get behind the rifle in an unnatural position to take his looks: what he sees probably doesn't look just the way the instructor described it (perhaps the student is holding his eye in a different position from that of the Instructor when the sights were lined up), but as long as the Instructor says "That is correct sight alignment," it must be so, even if there does seem to be a little line of white between the front sight and the bull, or some similar error.

In any case, the sights will not present the same picture when the student actually gets into his sling and into position with his cheek pressed against the stock and aims at a distant mark.

Now, when the student triangulates, he is to demonstrate to the Instructor that he knows how to consistently aim in the correct manner. But the student quickly finds how difficult it is, by signalling and then shouting, to get the Marker to move the sighting disc to the exact position he, the shooter, wants it to be moved to for a correct alignment. He decides, in short order, that if he ever wants to get the job done he'd better just be satisfied with an "almost right" alignment and call for a mark whenever the sights are "almost right." Besides, he knows from having himself acted as a Marker how difficult it is to keep the aiming disc from slipping just a little bit when the shooter calls for a mark: if he does line up exactly right it probably won't be so marked on the paper. Anyway, he is in an unnatural position; he has to keep away from the rifle, otherwise he will throw the whole thing out of line.

A man gets mighty tired and loses interest pretty quickly trying to do something that won't come out right anyway, what with the box moving every now and then, and the signals failing to get the aiming disc moved just the way he wants it to be moved, and, anyway, that numbskull on the disc always moves it just before marking.

Besides, the shooter is *expected* to make a *triangle*, isn't he? Looks as if it's all right to make a *little* error, isn't it—otherwise a fellow would be required to put one mark on top of another. On

top of all that, if the triangle is a little bit too large and the Instructor doesn't like it, the shooter can always put the blame on the Marker or something other than on his inability to get consistently good alignments. Did you every find a shooter who would admit that *he* ever did *anything* wrong?

The upshot of the whole thing is that when the shooter reaches the range, he is very likely to be an "Almost Righter."

An "Almost Righter" can't shoot decent scores on the target range—therefore, neither will he hit what he shoots at on the battlefield.

Any device that will help to eliminate "Almost Righters" is valuable, but a device that is simple, durable, economical to manufacture and maintain, and easy to understand and use in training is a real find.

Such a device *is* available.

It is the "Winter Sighting Drill Target," devised back in 1908 by Lieutenant Colonel John G. Winter, Cavalry, Retired, and now in general use for the first time at the Quantico Rifle Range.

A complete description of the device and how to make it is shown in the attached drawings.

Forty-four of the Aiming Drill Targets were made by two Range carpenters in their spare time during a period of 1 week, and the job included painting.

Every part of the Targets were made from scrap or materials on hand at the Rifle Range, with the exception of the mirrors which did cost 10 cents apiece.

The Sighting Drill Targets were used in the sighting and aiming instruction of 750 recruits, and their first day scores on the range were 5 percent higher than first day scores fired by men trained with the old equipment. One group, in their final qualification, attained a qualification 13 percent above the previous high for similar groups over the same course. The average of the 750 on firing for qualification when compared with similar groups show an improvement of from 3 to 9 percent.

There seems to be little question that the Winter Sighting Drill Target does a pretty good job of eliminating the "Almost Righters" when it comes to Sighting and Aiming.

What does the Winter Target have that makes it so superior to the old equipment?

Well, an examination of the drawings and the pictures will make some of the advantages apparent.

In general, the Winter Target consists of a long bar, at one end of which is a rifle rest and a recording board, and at the other end, a mirror. The rifle rest is arranged so that an M1903, an M1917,

one of the caliber .22 rifles or an M1 rifle may be clamped into position, and pointed at the mirror. The recording board, close to the right hand of the student, is equipped with a yoke on the front side of which may be attached a miniature target. The rear side has a small hole drilled through the wood through which dots may be marked with a pencil. The yoke has a clamping screw which may be tightened so that the yoke will not move on the recording board except by the pressure of the hand of the student. The bar may be mounted on a stand so that exercises may be conducted with the student sitting on an ammunition box, or the bar may be laid on the ground and the exercises performed in the prone position. As far as that goes, a high stand may be provided so that the exercises may be conducted with the student in the standing position. Again, with a pistol clamped in the rifle rest and the bar mounted on a high stand, pistol sighting exercises may be carried on with far more efficiency than with the equipment described in the Field Manuals. Two types of eyepieces, to insure similarity of position of eye of the Instructor and Student in dual exercises, are shown in the drawings one to be attached to the bolt handle of the M1903, the M1917 or the caliber .22, M1 or M2 Rifles, and the other to be attached to the receiver of the M1 Rifle.

Now, note that when the rifle is clamped in the rest, the rifle, the bar, the mirror and the recording board becomes as a single unit.

If the rifle is moved, the whole works move.

In other words, when an exercise is to be conducted the Instructor and the Student can get behind the rifle, get the butt into the shoulder, take hold of the rifle as if they were actually going to fire, press the cheek against the stock and get the eye at the point where it will be when they actually aim at a target.

There is no unnatural position here; no holding of the eye in a strained position; no straining of the neck to get a look without moving the rifle.

Note that when the Winter Sighting Drill Target is used as a sighting bar there is no artificiality: when the student looks through the sights into the mirror he sees a *true picture of rifle sights in alignment.* For the sights *are* rifle sights.

When the student progresses to the point that he is to triangulate, he does not have to signal to a Marker to get the aiming disc onto his front sight. All he has to do is move the yoke with his right hand until the bulls-eye appears in its correct position. When he is satisfied with the alignment, the *student* makes his *own* mark. If he doesn't get a group, there is no one to blame but himself, no alibis are accepted.

There is no signalling, no yelling, no confusion when exercises are conducted on Winter Targets. Once an Instructor has demonstrated correct sight alignment on the Winter Target he needs but give the students the opportunity to get a crack at the device—they will carry on without help from then on.

Triangles are not permitted on a Winter Target. For the equipment makes possible such precise alignments that there is no excuse for *triangles*. If a man aligns his sights correctly every time, he will superimpose one dot on another, and so the term "Dotting Exercise" is substituted for "Triangulation Exercise."

A miniature of every type and size of target may be inserted in the target mount on the front of the yoke. At one sitting, a student may be shown the appearance of the "A" Target at 200 yards or 300 yards or the "B" target at 600 yards or the "D" target at 500 yards or a man crouched behind a bush 400 yards away. The size of the targets is relative to the standard targets as the distance from eye to mirror to yoke is to the range to be simulated.

Very little space is required for a Winter Sighting Drill Target, and it doesn't make much difference what the weather conditions may be during the drill period for the device will work as well indoors as out. As a matter of fact, a Winter Target in the squad room, the Armory or the Club Room with a 50-watt bulb hanging in the right position, should result in many of the lads spending some of their *night* hours practicing the *exactly correct* sighting of their weapons, trying to superimpose one dot on another fifteen or twenty times in succession.

And, finally, several exercises may be performed with the Winter Target that are not entirely practical with the sighting bar and triangulation gear.

A series of exercises with the Winter Target which will certainly teach precisely correct sighting and aiming is described as follows:

(1) *Correct Sighting and Aiming.*—The Instructor discusses with the assembled students the subject of sighting and aiming. He shows to them several prepared cards: a picture of the peepsight of the rifle; another of the peep and front sight aligned; another of the peep, front and bull aligned; if instructing in the M1903 rifle, another of the battlesight, and so on. He closes with remarks to the effect that correct alignment will now be shown using the actual rifle.

(2) *Correct Sight Alignment.*—(*a*) Moving to the Winter Targets, the Instructor demonstrates how to clamp the rifle in the rifle rest, and attaches the eyepiece. The students set up their rifles in a similar manner. The Instructor then moves down the line, moving

the eyepiece, sights or mirror as necessary to bring the sights into perfect alignment. The students view and study the alignment. The yokes are swung out of the fields of the mirrors during this exercise.

(*b*) The Instructor moves down the line, shifting the position of the eyepieces, throwing the sight picture out of alignment. The students then, in turn, bring the sights back into alignment, calling for the Instructor to check them after the first few attempts. Thereafter, if necessary to continue the exercise, the students may check on each other.

(3) *Correct Aiming on the Target.*—(*a*) With the sights in alignment, the Instructor moves the yoke with the miniature of the "A" target at 200 yards into the field of the mirror, and brings the bullseye to its correct position over the front sight. The students then view this exact alignment.

(*b*) The alignment on the various targets having been thrown out by the Instructor, the students, in turn, bring the sights back into alignment on the target. The Instructor checks the first attempts and then has the students check on each other.

(4) *Dotting Practice.*—(*a*) With the eyepiece still on the rifle, so that the student will be required to concentrate on but one operation, that of getting the front sight tangent to the bull at 6 o'clock, the Instructor demonstrates how the error or lack of error of a series of sight alignments may be recorded for all to see. He brings the sights and target into alignment by moving the yoke; when the alignment is correct, he marks a dot through a small hole in the rear face of the yoke. He then moves the yoke and repeats the operation until he has made three dots. If his sight alignments have been uniform, the dots will be superimposed. The Instructor demonstrates that "Almost Right" alignments result in dots out of the group.

(*b*) The students having been shown how to perform the exercise, one relay at a time may work on the Targets by themselves while the remainder who are waiting are practiced in sight setting and sight changing in rear of the area. As each man finishes his series of dots, a half turn of one of the wing nuts holding the mirror will result in the dots of the following man being recorded on a different part of the recording sheet.

(5) *Advanced Dotting Practice.*—(*a*) With the eyepiece removed, so that the student is required to concentrate on sight alignment as well as alignment on the target, the Instructor demonstrates that dots may still be superimposed one on another if the eye is held in the same relative position for each shot. At a later date, when position exercises have been completed and the students are ready

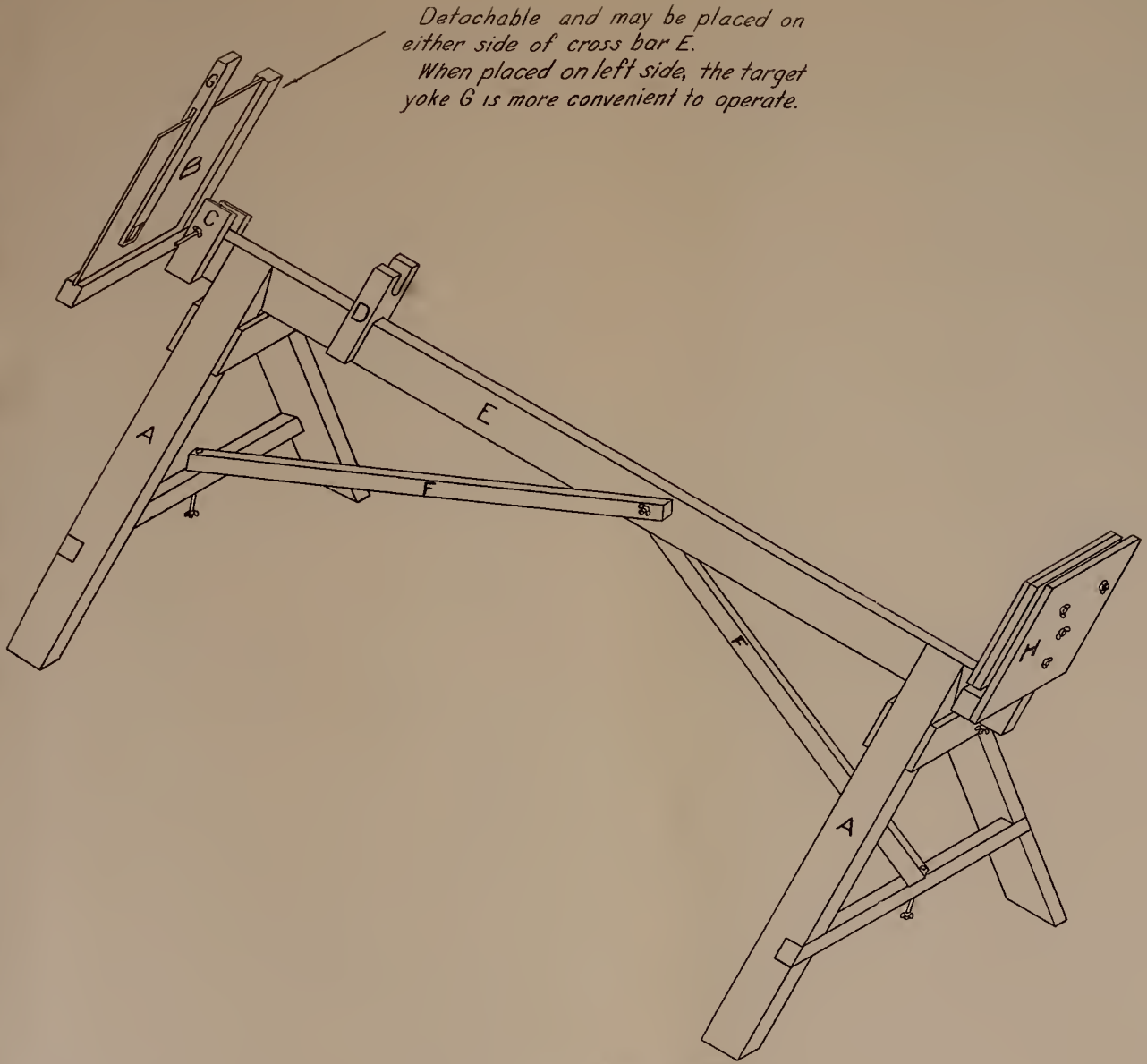

FIGURE 1.—Winter sighting drill target assembled.

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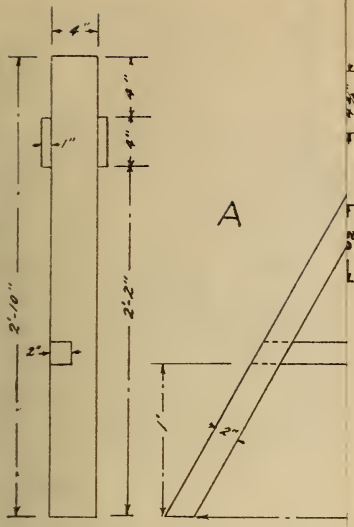
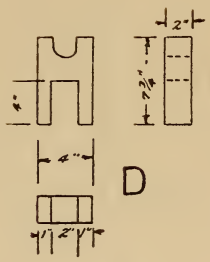
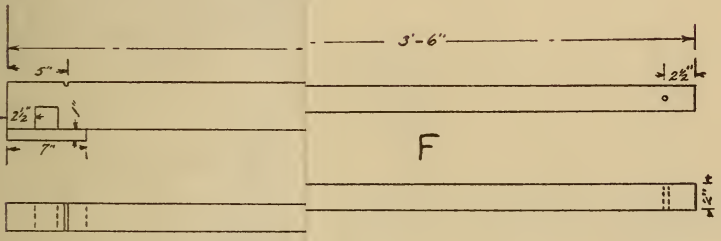
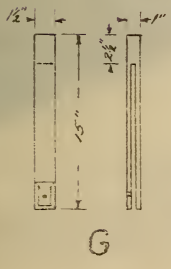


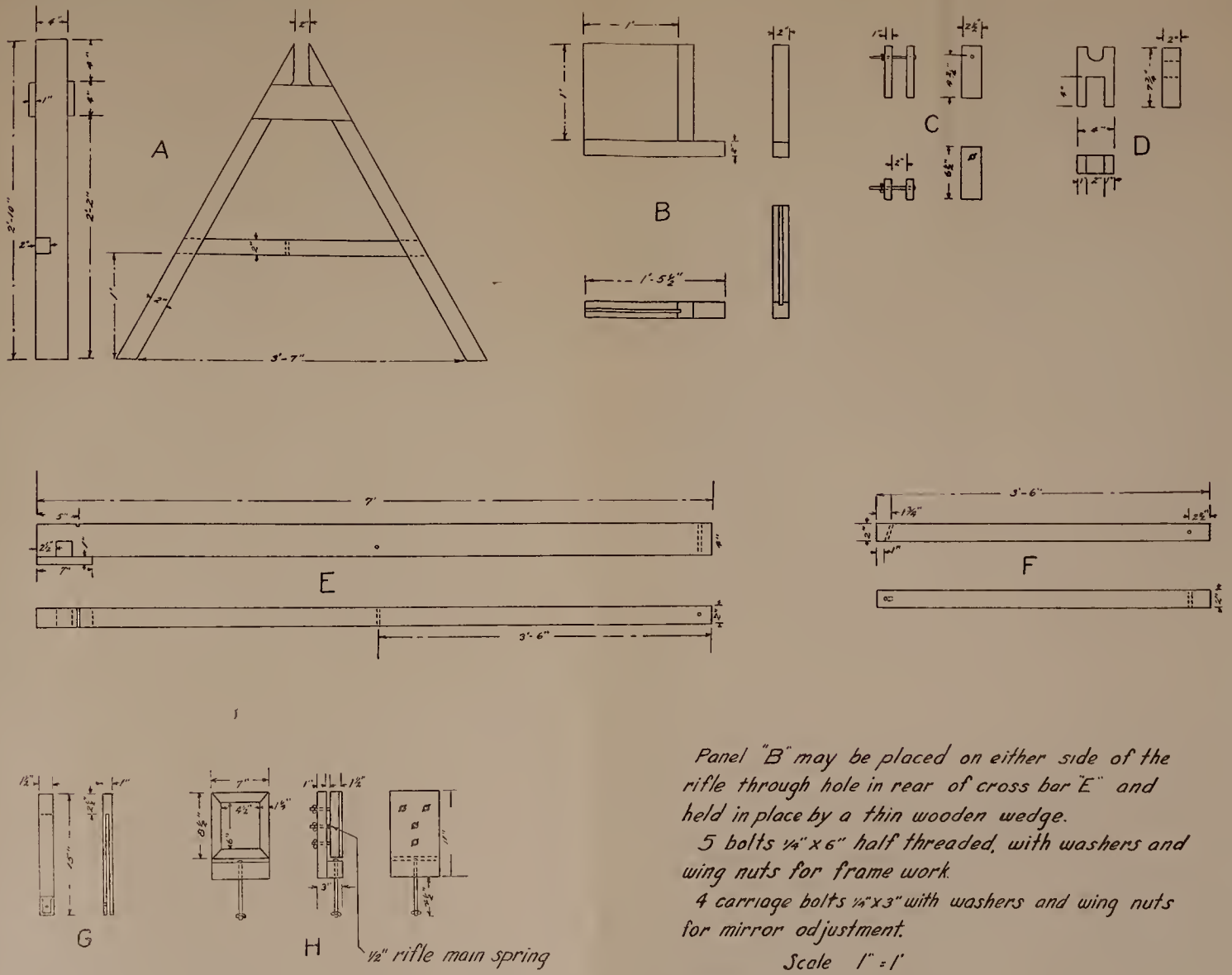






on either side of the
of cross bar "E" and
den wedge.
aded, with washers and

washers and wing nuts



Panel "B" may be placed on either side of the rifle through hole in rear of cross bar "E" and held in place by a thin wooden wedge.

5 bolts ¼" x 6" half threaded, with washers and wing nuts for frame work.

4 carriage bolts ¼" x 3" with washers and wing nuts for mirror adjustment.

Scale 1" = 1'

FIGURE 1 A.—Details of the winter sighting drill target.

for the really inside stuff on shooting, it may be well to come back to the Winter Targets to demonstrate that the difference in position of the eye in relation to the sight is the reason why some men use the same elevation at 300 yards prone as at 200 yards standing and other similarly disconcerting combinations. A man so affected may satisfy himself on what happens by trying to run a series of dots with his eye 2 inches from the cocking piece as in firing prone and then a series with his eye 4 inches from the cocking piece as in firing from the standing position.

(*b*) The students then practice dotting without the eyepiece until they can run a series of five dots superimposed.

(6) *Battlesight Practice.*—The second to the fifth sighting and aiming exercises are repeated, using the battlesight of the M1903 rifle. It will be found that with reasonable practice and a miniature of the "D" target, series of five superimposed dots will be made very frequently.

In addition to these basic exercises in sighting and aiming with rifles, Weapons Instructors will find that there are many other uses for the Winter Sighting Drill Targets in explaining sighting problems with other weapons.

Anyhow, the next time some fellow says "You Marines must do it with mirrors," he'll be right.

We *do* do it with mirrors in the Marine Corps.

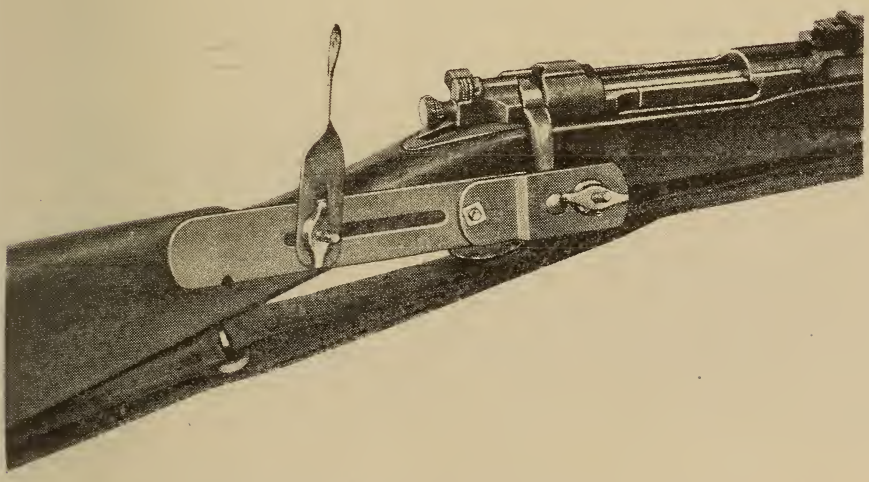


FIGURE 2.—The adjustable eyepiece for the United States rifles, cal. .30, M1903 or M1917, and the United States rifles, cal. .22, M1922, M1 or M2.

NOTE.—¼-inch pieces of an M1903 rifle mainspring, or similar piece, inserted over the clamping bolts and between the clamp and the extension bar will facilitate rapid positioning of the eyepiece on the bolt handle.

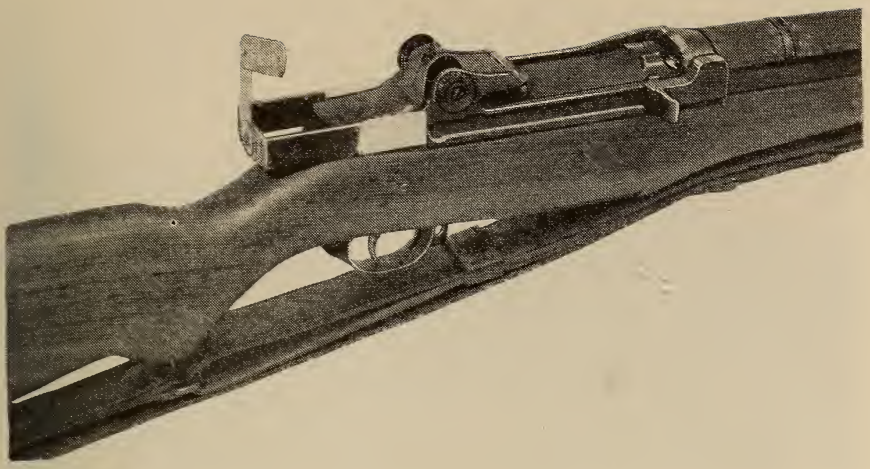


FIGURE 3.—The adjustable eyepiece for the United States rifle, cal. .30, M1.

NOTE.—Adhesive tape on the spring clip prevents marring of the receiver.

FIGURE 4.—Forty-four winter targets in position for sighting and aiming exercises.

Space required —Less than 50 x 120 feet.
Capacity —264 men per hour in sighting exercises.
528 men per hour in aiming exercises.

FIGURES 5 and 6.—Groups at drill on the winter targets.

FIGURE 7.—One instructor may efficiently control several students on winter targets.

The Student performs every operation by himself—no alibis for errors are acceptable. The time required to complete a given exercise is one-third to one-half that required with other types of training equipment.

FIGURE 8.—An M1903 rifle in position for a battlesight exercise.

With the rifle clamps tightened by turning the wing nuts, the rifle, bar, mirror, and recording board become a single unit—the student can get behind the rifle, take a natural position, and therefore, see the sight picture that will be presented when he goes on the range to fire.

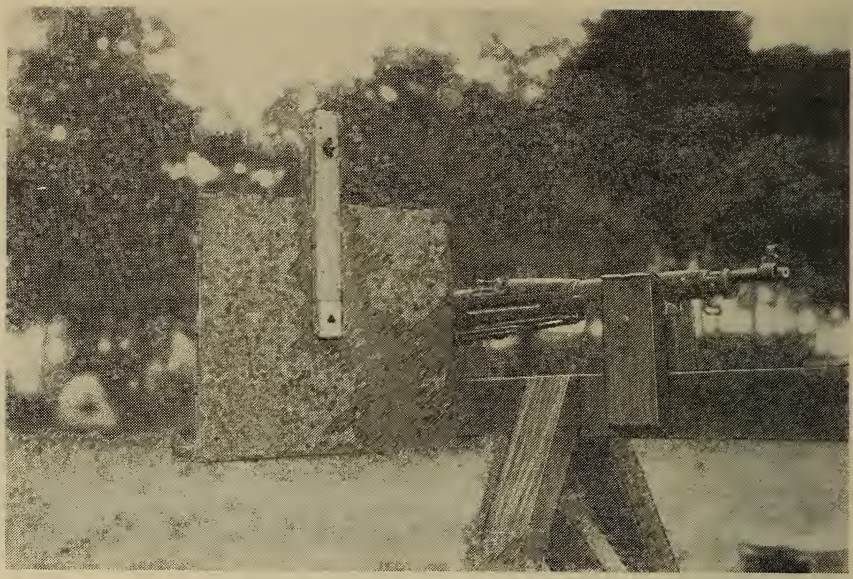


FIGURE 9.—The miniature target in a metal holder.

A metal target holder attached to the yoke permits rapid change of miniature targets, the dimensions of which are proportionate to the standard targets at the range at which it is desired that the appearance of the standard targets be duplicated. Make the miniatures on target cardboard with linoleum cut-outs and india or printers ink.

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